

MATERIAL SAFETY DATA SHEET

DATE PREPARED: 07/26/1995

MSDS No: 1467

SOLARIS

ORTHO® MALATHION 50 PLUS® Insect Spray

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: ORTHO® MALATHION 50 PLUS® Insect Spray

PRODUCT DESCRIPTION: Insecticide

MANUFACTURER

The SOLARIS Group
of Monsanto Company

P.O. Box 5008

San Ramon, CA 94583-0808

EPA REG. NO.: 239-739C PN: 1992-W

24 HR. EMERGENCY TELEPHONE NUMBERS

Emergency Phone 800-454-2333

2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>Wt. %</u>	<u>CAS Registry #</u>
Malathion, Dimethyldithiophosphate-diethyl Mercaptosuccinate	50	121-75-5
INERT INGREDIENTS	~ 50 .0	

"Inert Ingredients" is a term defined by the U.S. Environmental Protection Agency under the Federal Insecticide, Fungicide, and Rodenticide Act (40 CFR 158.153). It refers to any substance, other than an active ingredient, which is intentionally added to a pesticide product. Some inert ingredients may be hazardous chemicals, as defined by the Federal OSHA Hazard Communication Standard (29 CFR 1910.1200). The hazards associated with these inert ingredients have been included in this document.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

PHYSICAL APPEARANCE: Light amber liquid

IMMEDIATE CONCERNS: - CAUSES SUBSTANTIAL BUT

TEMPORARY EYE DAMAGE

- HARMFUL IF SWALLOWED
- AVOID CONTACT WITH SKIN OR CLOTHING
- AVOID BREATHING VAPORS OR SPRAY MIST
- FLAMMABLE
- KEEP OUT OF REACH OF CHILDREN

POTENTIAL HEALTH EFFECTS

EYES: The undiluted product is moderately irritating to the eyes. Eye contact may include discomfort, tearing, swelling, redness, and blurred vision. See Toxicological Information, section 11.

SKIN: This substance is a moderate skin irritant. Skin irritation may include discomfort, redness, swelling, and possibly blistering. If absorbed through the skin, this substance is considered practically non-toxic to internal organs. See Toxicological Information, section 11.

INGESTION: Depending upon the amount of product swallowed, this substance can produce signs and symptoms of systemic poisoning. In addition the product contains a petroleum solvent that can directly enter the lungs if it is swallowed (this is called aspiration). This can occur during the act of swallowing or when vomiting the substance. Once in the lungs, the petroleum solvent is very difficult to remove and can cause severe injury to the lungs and death. See Toxicological Information, section 11.

INHALATION: Prolonged or repeated inhalation exposure to the product vapor or spray mist may be harmful. See Toxicological Information, section 11.

COMMENTS HEALTH: Depending upon the extent and degree of overexposure to the product, signs and symptoms of cholinesterase inhibition can result following either ingestion, skin contact or inhalation routes of exposure. Signs and symptoms of cholinesterase inhibition can also result from either acute (one time), subchronic (repeated short-term) and chronic (daily life-time) overexposure to the product.

Signs and symptoms of cholinesterase inhibition usually occur within 12 hours following overexposure. These effects may include, but may not be limited to, headache, dizziness, weakness, nausea, vomiting, diarrhea, constriction of the pupil of the eye, blurred or dark vision, excessive salivation or nasal discharge, profuse sweating and abdominal cramps. Incontinence, unconsciousness, convulsions and breathing difficulties are indicative of severe poisoning. In untreated severe poisoning, death is due to respiratory failure or cardiac arrest.

This product also contains a petroleum distillate. Depending upon the degree of overexposure, the systemic toxicity of the product may be of less

concern than the potential clinical complications that can result from aspiration of the petroleum distillate into the lungs if the product is either swallowed or vomited.

4. FIRST AID MEASURES

EYES: Flush eyes immediately with fresh water for at least 15 minutes while holding the eyelids open. Remove contact lenses if worn. Call a physician.

SKIN: If on skin, remove contaminated clothing, wash skin with plenty of soap and water. Wash contaminated clothing before reuse. If irritation persists, see a doctor.

INGESTION: If swallowed, give water or milk to drink and telephone for medical advice (800-457-2022 OR 800-454-2333). DO NOT make person vomit unless directed to do so by medical personnel. If medical advice cannot be obtained, then immediately take the person and product container, with label, to the nearest medical emergency treatment center or hospital.

INHALATION: Remove victim to fresh air. Apply artificial respiration if indicated.

NOTES TO PHYSICIAN: This material contains a cholinesterase inhibitor. Measurement of blood cholinesterase activity may be useful in monitoring exposure. If signs of cholinesterase inhibition appear, atropine sulfate is antidotal. 2-PAM (PROTOPAM) is also antidotal and may be used in conjunction with atropine but should not be used alone. Ingestion of this product or subsequent vomiting can result in aspiration of light hydrocarbon liquid which can cause pneumonitis.

ADDITIONAL INFORMATION: Medical Information: Call day or night, 1-800-454-2333 OR 1-800-457-2022.

5. FIRE FIGHTING MEASURES

FLASHPOINT AND METHOD: 106°F TAG CC

EXTINGUISHING MEDIA: CO₂, Dry Chemical, Foam and Water Fog.

HAZARDOUS COMBUSTION PRODUCTS: Thermal decomposition may produce dimethylsulfide, sulfur dioxide, carbon monoxide, carbon dioxide, phosphorous-pentoxide and nitrogen oxides.

FIRE FIGHTING PROCEDURES: Liquid evaporates and forms vapor (fumes) which can catch fire and burn with explosive violence.

Invisible vapor spreads easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches. Fire hazard is greater as liquid temperature rises above 85 F.

Products of combustion from fires involving this material may be toxic. Avoid breathing smoke and mists. Avoid personnel and equipment contact with fallout and runoff. Minimize the amount of water used for fire fighting. Do not enter any enclosed area without full protective equipment, including self-contained breathing equipment. Contain and isolate runoff and debris for proper disposal. Decontaminate personal protective equipment and fire fighting equipment before reuse. Read the entire document.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: Soak up spilled material with paper towels or other absorbent material and discard in trash. Product is highly flammable. Keep all sources of ignition away from spill.

LARGE SPILL: Eliminate all sources of ignition in vicinity of spill or released vapor.

Liquid spills on floor or other impervious surfaces should be contained or diked, and should be absorbed with attapulgite, bentonite or other absorbent material. Collect contaminated absorbent, place in plastic-lined metal drum and dispose of in accordance with instructions provided under Section 13. "DISPOSAL". Thoroughly scrub floor or other impervious surface with a strong industrial type detergent solution and rinse with water.

For liquid spills that soak into the ground, contact the applicable Federal, State and or County Health Dept. for disposal recommendations. If disposal is required then refer to Section 13 "DISPOSAL" for instructions.

Leaking containers should be separated from non-leakers and either the container or its contents transferred to a drum or other non-leaking container and disposed of in accordance with instructions provided under Section 13 "Disposal". Any recovered spilled liquid should be similarly collected and disposed of.

Do not contaminate water, foodstuffs or feed by storage or disposal.

GENERAL PROCEDURES: Observe all protection and safety precautions when cleaning up spills -- see Section 8. "EXPOSURE CONTROLS/PERSONAL PROTECTION". For help with any spill, leak, fire or exposure involving this material, call day or night (800) 454-2333.

7. HANDLING AND STORAGE

GENERAL PROCEDURES: Keep pesticide in original container. Do not put concentrate or dilute into food or drink containers. Store in a secure, preferably locked, storage area. Do not store diluted spray.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: No special ventilation is normally required. However, if operating conditions create airborne concentrations which exceed the recommended exposure standards (in Section 8), then special ventilation may be required.

PERSONAL PROTECTION

EYES AND FACE: Do not get this material in your eyes. Eye contact should be avoided by wearing chemical goggles or a face shield.

SKIN: Avoid contact with skin or clothing. Skin contact should be minimized by wearing protective clothing including chemical resistant gloves.

RESPIRATORY: Handling of the undiluted product is not likely to present an airborne exposure concern during normal handling. In the event of an accidental discharge of the material during manufacture or handling which produces a heavy vapor or mist, workers should put on respiratory protection equipment. Consult respirator manufacturer to determine appropriate type of equipment. Observe respirator use limitations specified by NIOSH MSHA or the manufacturer.

For application of product diluted in accordance with label instructions, no special respiratory protection is required.

OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200):

<u>Chemical Name</u>	<u>EXPOSURE LIMITS</u>		
	<u>OSHA PEL</u> <u>ACGIH TLV</u> <u>ACGIH STEL</u>		
Dimethyldithiophosphate-diethyl Mercaptosuccinate	15 mg/m ³	10 mg/m ³	None
Aromatic Hydrocarbon	100 ppm	100 ppm	150 ppm

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid

APPEARANCE: Amber liquid with garlic-like odor

PERCENT VOLATILE: No Data Available

SOLUBILITY IN WATER: Miscible with water.

DENSITY: No Data Available

SPECIFIC GRAVITY: 1.040 to 1.055 gr/cc at 20°C

VISCOSITY: Same as water.

COMMENTS:

pH: 5.0 -8.0 (For a 1% Solution in 50/50 IPA/Water)

10. STABILITY AND REACTIVITY

STABLE: YES

HAZARDOUS POLYMERIZATION: YES

POLYMERIZATION: May occur at temperatures above 100°C.

HAZARDOUS DECOMPOSITION: Thermal decomposition may produce dimethylsulfide, sulfur dioxide, carbon monoxide, carbon dioxide, phosphorous-pentoxide and nitrogen oxides.

INCOMPATIBLE MATERIALS: May react with strong bases or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

11. TOXICOLOGICAL INFORMATION

ACUTE

EYES: The results of the rabbit eye studies indicate that, corneal involvement or irritation clearing in 8-21 days.

DERMAL LD₅₀: The results of the rabbit skin irritation test indicate mild to moderate skin irritation. The Draize irritation score (range 0-8) was 3.8. The dermal LD50 in rabbits is greater than 2 g/kg.

ORAL LD₅₀: The oral LD50 in male rats is 2.314 g/kg. The oral LD50 in female rats is 2.13 g/kg.

INHALATION LC₅₀: The 4-hour inhalation LC50 in rats is greater than 5 mg/l for the product diluted at a ratio of 1 to 2.5.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: This pesticide is toxic to fish, aquatic invertebrates, and aquatic life stages of amphibians. Do not apply directly to water. Drift and runoff may be hazardous to aquatic organisms in areas near the application site. Do not contaminate

water when disposing of equipment washwaters. This product is highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area.

13. DISPOSAL CONSIDERATIONS

FOR LARGE SPILLS: Material collected that cannot be reprocessed should be disposed of in a landfill approved for pesticide disposal or in accordance with applicable Federal, State or local procedures.

PRODUCT DISPOSAL: The Solaris Group is committed to responsible environmental practices and recommends that all of the product be used up, carefully following all label directions and precautions.

If necessary to dispose of partially filled product container, then securely wrap it in several layers of newspaper and discard in trash.

EMPTY CONTAINER: Do not reuse container. Rinse thoroughly before discarding in trash.

14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)

PROPER SHIPPING NAME: Not Regulated

PRIMARY HAZARD CLASS/DIVISION: None

UN/NA NUMBER: NONE

PACKING GROUP: No

U.S. SURFACE FREIGHT CLASS: Insecticides, Fungicides, Insect or animal repellents or vermin exterminators, NOI, Other than poison

AIR (ICAO/IATA)

PROPER SHIPPING NAME: Consumer Commodity

SPECIAL SHIPPING NOTES: The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

15. REGULATORY INFORMATION

UNITED STATES**SARA TITLE III (SUPERFUND AMENDMENTS AND
REAUTHORIZATION ACT)**

PRODUCT CLASSIFICATION UNDER SECTION 311 OF SARA				
ACUTE:	CHRONIC:	FIRE:	REACTIVITY:	PRESSURE
YES	NO	YES	NO	GENERATING: NO

313 REPORTABLE INGREDIENTS: Malathion (CAS No.
121-75-5)

TSCA (TOXIC SUBSTANCE CONTROL ACT)

TSCA REGULATORY: All non FIFRA regulated components are
on the US EPA's TSCA Inventory List.

16. OTHER INFORMATION**HMIS CODES**

FIRE: 2 HEALTH: 2 REACTIVITY: 0 PROTECTION: -

NFPA CODES

FIRE: 3 HEALTH: 2 REACTIVITY: 0 SPECIAL: -

APPROVAL DATE: 09/11/1995

REVISION SUMMARY New MSDS

COMMENTS: For additional information concerning this product, call
the SOLARIS Groups Consumer Helpline at 800-225-2883.

MANUFACTURER DISCLAIMER: This Material Safety Data
Sheet (MSDS) contains health, safety and environmental information for
you and your employees. It does not replace the precautionary language,
use directions, or the storage and disposal information found on the
product label. Information contained in this MSDS will help you to
prepare for emergency response and to meet community right-to-know,
emergency response and reporting requirements under SARA Title III and
many other laws. Emergency response agencies and health care providers
will also find this additional information useful.

Use of this product is regulated by the U.S. Environmental Protection
Agency (EPA) through the approved label copy. It is a violation of Federal
law to use this product in a manner inconsistent with its labeling.

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"Information") are presented in good faith and believed to be correct as of the date hereof, Monsanto Company and The Solaris Group make no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determinations as to its suitability for their purposes prior to use. In no event will Monsanto Company or The Solaris Group be responsible for damages of any nature whatsoever resulting from the use of or reliance upon Information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS.